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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------------|
| 09/826,394 | 04/03/2001 | Marlyn J. Anderson | 316.00100120 | 2939 |
| 26813 7590 01/04/2008 MUETING, RAASCH & GEBHARDT, P.A. P.O. BOX 581415 MINNEAPOLIS, MN 55458 | | | EXAMINER SINGH, DALZID E | |
| | | | ART UNIT 2613 | PAPER NUMBER |
| | | | MAIL DATE 01/04/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 09/826,394 | Applicant(s) ANDERSON ET AL. | |
| | Examiner Dalzid Singh | Art Unit 2613 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28, 35-48 and 50-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 45-48, 50 and 61-74 is/are allowed.
- 6) ☒ Claim(s) 1-9, 14-21, 24-28, 35-44, 51-55, 57-60 and 75-78 is/are rejected.
- 7) ☒ Claim(s) 10-13, 22, 23 and 56 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 75-77 are rejected under 35 U.S.C. 102(b) as being anticipated by Fazio (US Patent No. 5,768,397).

Regarding claim 75, Fazio discloses portable receiver apparatus, as shown in Figs. 3-5, comprising:

ear retaining means for enclosing a speaker and configured for insertion in the concha of an ear of a user (see Figs. 3 and 4);

infrared light detection means (18) for detecting infrared pulses and generating one or more electrical signals representative of such detected infrared pulses; and

body portion means (Figs. 3 and 4) for enclosing at least demodulation means (30) for converting the one or more electrical signals representative of the detected infrared pulses to an audio signal to power the speaker (24) to produce a sound output, the body portion means extending from a first end to a second end along a body portion axis, wherein the ear retaining means extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal

to the body portion axis and further wherein the infrared light detection means is positioned at the second end of the body portion means.

Regarding claim 76, wherein the body portion means comprises means for receiving a removable battery apparatus (it is inherent that body portion comprises means for receiving removable battery in order to operate).

Regarding claim 77, wherein at least one of the body portion means and the removable battery apparatus comprises retaining means to secure the battery apparatus in the body portion means (it is inherent to provide retaining means to secure the battery in order to hold the device together and avoid disassembly in the ear).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, 14-21, 24-28, 35-44 and 51-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fazio (US Patent No. 5,768,397) in view of Julstrom et al (US Patent No. 6,694,034).

Regarding claim 1, Fazio discloses a portable communication system for use by a user with a communication apparatus having an audio port, as shown in Figs. 2 and 5, the system comprising:

an infrared transmitter apparatus (Fig. 2), wherein the infrared transmitter apparatus comprises:

at least one audio port configured to receive an audio signed representative of received audio input from the communication apparatus, at least one infrared light emitting device (10), modulation circuitry (14) operable to convert the audio signal to one or more electrical pulses to drive the infrared light emitting device to transmit one or more corresponding infrared pulses, a microphone (4) coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus, and

a transmitter housing enclosing the modulation circuitry and the microphone and upon which the at least one infrared light emitting device is mounted (it is inherent that the circuit comprises housing), wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus (the device shown in Fig. 2 is coupled to device of Fig. 5 via wireless connection, therefore it can be removably coupled; it would have been obvious to an artisan of ordinary skill in the art to provide different sizes of housing); and

an infrared receiver apparatus (Fig. 5), wherein the infrared receiver apparatus comprises: an infrared light detection device (18) to detect the one or more corresponding infrared pulses and generate one or more electric signals representative of the detected infrared pulses, a speaker (24), demodulation circuitry (30) operable to convert the one or more electric signals representative of the detected infrared pulses to an audio signal to power the speaker to produce a sound output, and a receiver housing enclosing the speaker and the demodulation circuitry and upon which the infrared light detection device is mounted, wherein the receiver housing is formed to be self-supported by the ear of the user (Figs. 3 and 4).

Fazio discloses modulator which modulates the audio signal to drive the infrared light and differ from the claimed invention in that Fazio does not specifically disclose that the modulation circuitry (14) operable to convert the audio signal to one or more constant width electrical pulses. In applicant's disclosure, such constant width electrical pulses are generated using pulse width modulator. In optical communication it is well known to provide pulse width modulator which provides constant width electrical pulses. Julstrom et al teach transmission detection for hearing improvement application using pulse width modulator which is capable to generate constant width electrical pulses. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the modulator of Fazio with that of pulse width modulator as taught by Julstrom et al. The benefit of using pulse width

modulator is to modulate optical signal using lower power level and hence save battery power.

Regarding claims 2, 18, 36 and 52, Fazio does not disclose that the microphone is coupled to the at least one audio port of the infrared transmitter apparatus via an amplification circuit to provide the audio signal with a gain. However, it would have been obvious to provide amplifier in order to increase signal strength.

Regarding claims 3, 19, 37 and 53, in view of the previous claims, amplifier increases gain of the signal, therefore, it would have been obvious to provide the gain in the range of 2 to 20.

Regarding claims 4, 20, 38, 46 and 54, Fazio shows that wherein the transmitter housing comprises means for removably attaching the transmitter housing to the communication apparatus.

Regarding claims 5, 21 and 39, the combination does not disclose that the transmitter housing is removably coupled onto the communication apparatus by a two faced adhering system. However, since there various ways of attaching the devices, therefore, it would have been obvious to an artisan of ordinary skill in the art to provide two faced adhering system to attach the devices.

Regarding claims 6, 40 and 47, wherein the receiver housing comprises an in the ear receiver housing securable within the concha of the ear (see Fig. 3).

Regarding claims 7 and 41, wherein the receiver housing comprises a behind the ear receiver housing securable by the pinna of the ear.

Regarding claims 8, 24 and 42, shown in Fig. 2, wherein the at least one audio port of the transmitter apparatus configured to receive an audio signal representative of received audio input from the communication apparatus comprises an audio port configured for wired connection to the audio port of the communication apparatus.

Regarding claims 9, 25, 43 and 58, wherein the communication apparatus is a phone apparatus having a microphone/speaker audio port, and further wherein the audio port of the transmitter apparatus is configured for wired connection to the microphone/speaker audio port by a cord/plug connector apparatus (see col. 2, lines 23-38).

Regarding claims 14, 26, 44, 59, the combination does not specifically disclose the size of the transmitter housing comprises a volume less than about 5 cm³. However, it would have been obvious to an artisan of ordinary skill in the art to provide small size, such as 5 cm³ in order to provide compact size.

Regarding claims 15, 27 and 60, wherein the transmitter housing is configured to be removably coupled to a removable battery apparatus (it is well known that the device must have replaceable battery which is removable; see col. 2, lines 45-53).

Regarding claims 16 and 28, the combination disclose power supply and differ from the claimed invention in that the combination does not disclose the removable battery apparatus is configured to receive at least one of button type batteries and cylindrical alkaline batteries. However, since there are various types of power supplies,

therefore it would have been obvious to provide various battery types such as button type or cylindrical alkaline batteries.

Regarding claim 17, Fazio discloses a portable transmitter apparatus for use by a user with a communication apparatus having an audio port, as shown in Fig. 2, the apparatus comprising:

- at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus;

- at least one infrared light emitting device (10);

- modulation circuitry (14) operable to convert the audio signal to one or more electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses;

- a microphone (4) coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus; and

- a transmitter housing enclosing the modulation circuitry and the microphone and upon which the at least one infrared light emitting device is mounted, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus.

Fazio discloses modulator which modulates the audio signal to drive the infrared light and differ from the claimed invention in that Fazio does not specifically disclose that the modulation circuitry (14) operable to convert the audio signal to one or more constant width electrical pulses. In applicant's disclosure, such constant width electrical pulses are generated using pulse width modulator. In optical communication it is well known to provide pulse width modulator which provides constant width electrical pulses. Julstrom et al teach transmission detection for hearing improvement application using pulse width modulator which is capable to generate constant width electrical pulses. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the modulator of Fazio with that of pulse width modulator as taught by Julstrom et al. The benefit of using pulse width modulator is to modulate optical signal using lower power level and hence save battery power.

Regarding claim 35, Fazio discloses a portable communication system for use by a user with a communication apparatus having an audio port, as shown in Fig. 2, the system comprising:

- a transmitter apparatus, wherein the transmitter apparatus comprises:

- at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus, modulation circuitry (14) operable to convert the audio signal to one or more constant width electrical pulses to drive a transmitter to transmit one or more corresponding, a microphone (4) coupled to

the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus, and a transmitter housing enclosing the modulation circuitry and the microphone, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus; and

a receiver apparatus operable for communication with the transmitter apparatus, wherein the receiver apparatus comprises:

a detection device (18) to detect the one or more corresponding pulses and generate one or more electric signals representative of the detected pulses, a speaker (24), demodulation circuitry (30) operable to convert the one or more electric signals representative of the detected pulses to an audio signal to power the speaker to produce a sound output, and a receiver housing enclosing at least the speaker and the demodulation circuitry, wherein the receiver housing is formed to be self-supported by the ear of the user (see Figs. 3 and 4).

Fazio discloses modulator which modulates the audio signal to drive the infrared light and differ from the claimed invention in that Fazio does not specifically disclose that the modulation circuitry (14) operable to convert the audio signal to one or more constant width electrical pulses. In applicant's disclosure, such constant width electrical pulses are generated using pulse width modulator. In optical communication it is well

known to provide pulse width modulator which provides constant width electrical pulses. Julstrom et al teach transmission detection for hearing improvement application using pulse width modulator which is capable to generate constant width electrical pulses. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the modulator of Fazio with that of pulse width modulator as taught by Julstrom et al. The benefit of using pulse width modulator is to modulate optical signal using lower power level and hence save battery power.

Regarding claim 51, Fazio discloses a portable transmitter apparatus for use by a user with a communication apparatus having an audio port, as shown in Fig. 2, the apparatus comprising:

- at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus;

- modulation circuitry (14) operable to convert the audio signal to one or more electrical pulses to drive a transmitter to transmit one or more corresponding constant width pulses;

- a microphone (6) coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus; and

a transmitter housing enclosing at least the modulation circuitry and the microphone (it is inherent that the circuit comprises housing), wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus (the device shown in Fig. 2 is coupled to device of Fig. 5 via wireless connection, therefore it can be removably coupled; it would have been obvious to an artisan of ordinary skill in the art to provide different sizes of housing).

Fazio discloses modulator which modulates the audio signal to drive the infrared light and differ from the claimed invention in that Fazio does not specifically disclose that the modulation circuitry (14) operable to convert the audio signal to one or more constant width electrical pulses. In applicant's disclosure, such constant width electrical pulses are generated using pulse width modulator. In optical communication it is well known to provide pulse width modulator which provides constant width electrical pulses. Julstrom et al teach transmission detection for hearing improvement application using pulse width modulator which is capable to generate constant width electrical pulses. Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to replace the modulator of Fazio with that of pulse width modulator as taught by Julstrom et al. The benefit of using pulse width modulator is to modulate optical signal using lower power level and hence save battery power.

5. Claim 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fazio (US Patent No. 5,768,397).

Regarding claim 78, Fazio does not specifically disclose the size of the device housing comprises a volume less than 13 cm³. However, it would have been obvious to an artisan of ordinary skill in the art to provide such size, such as 13 cm³ in order to provide compact size.

Allowable Subject Matter

6. Claims 61-74 are allowed.
7. Claims 10-13, 22, 23, 55 and 56 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 25 October 2007 have been fully considered but they are not persuasive.

On page 20 of the remark applicant indicates that "Fazio does not describe each and every element of claim 75. Rather, Fazio shows two different hearing aid configurations in Figures 3 and 4. Neither of these two configurations shown in Fazio have a body portion and an ear retaining portion that lie along axes that arc orthogonal

to one another as described in claim 75. In fact, it appears that there is just a single body lying along a single axis in each configuration.”

However the claim does not recite such limitation. Claim 75 recites “...the body portion means extending from a first end to a second end along a body portion axis, wherein the ear retaining means extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis...” Fazlio teaches such limitation.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

On page 22 of the remark applicant indicates that “The references cited do not teach or suggest all the limitations recited in claims 1 and 35. For example, Fazio does not teach or suggest a microphone coupled to the at least one audio port of the transmitter apparatus. Further, Fazio does not describe that the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Yet further, Fazio does not teach or suggest a transmitter housing that encloses the modulation circuitry and the microphone and which is configured to be removably coupled to the communication apparatus.”

Fazio shows transceiver system in Fig. 2, in which microphone (4) receives sound input from user to generate audio signal transmitted by the infrared transmitter (10). The system of Fig. 2 is able to communicate wirelessly to the communication system of Fig. 5. In the context of the claim, the term "*removably coupled*" is broadly interpreted as "devices or systems which are able to be removed from communication with each other". Therefore, if the device of Fig. 2 is placed in range or is able to be placed out of range to the communication system of Fig. 5, then it would be considered as "removably coupled".

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 31, 2007

DALZID SINGH
PRIMARY EXAMINER
Dalzid Singh